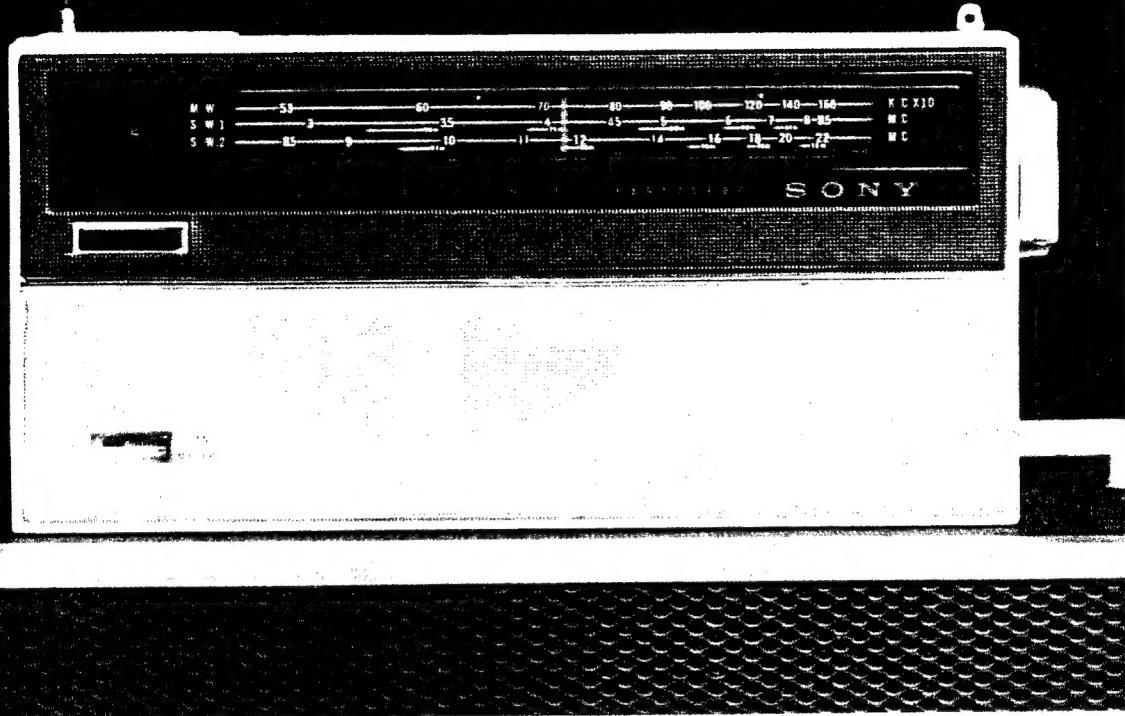


TR-824



Specifications

Circuit :	8 Transistor Superheterodyne
Frequency Coverage :	MW 530—1,605 Kc (566—187 m) SW ₁ 3—8.5 Mc (100—35.3 m) SW ₂ 8.5—22 Mc (35.3—13.6 m)
Intermediate Frequency :	455 Kc
Antenna System :	Built-in Ferrite Bar Antenna Built-in Telescopic Antenna
Maximum Sensitivity :	MW 30 dB (32/ μ V/m) (at 10 mW Output) SW ₁ 30 dB (32/ μ V/m) SW ₂ 36 dB (63/ μ V/m)
Selectivity :	22 dB at 10 Kc off resonance, at 1,400 Kc
Output Power :	260 mW (undistorted)
Current Drain :	12 mA at zero signal, 140 mA at 260 mW output
Speaker :	4" × 2-1/2" (10 × 6.5 cm) PM Dynamic, 8Ω
Battery :	Three size "C" Flashlight Batteries (4.5 Volts)
Dimensions :	9-1/16" × 4-1/3" × 1-15/16" (230 × 110 × 49 mm)
Weight :	2.2 lbs. (1.0 Kg)

SONY®
SERVICING GUIDE

Adjustment and Alignment

a) Frequency Coverage:

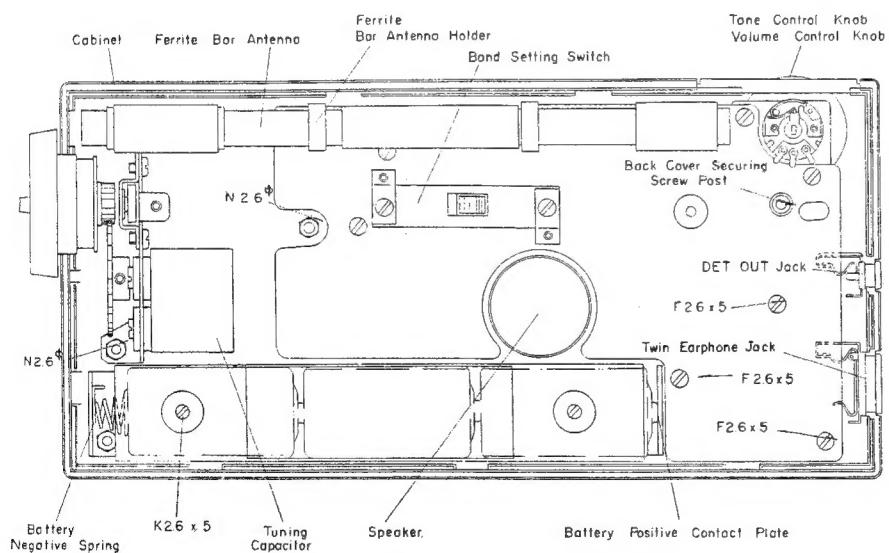
	Lower Limit	Adjust	Upper Limit	Adjust
MW	520 Kc	Core of MW OSC Coil (MW_O)	1,680 Kc	MW OSC Trimmer (C ₄₋₃)
SW ₁	2.90 Mc	Core of SW ₁ OSC Coil (SW ₁ _O)	8.60 Mc	SW ₁ OSC Trimmer (C ₄₋₂)
SW ₂	8.40 Mc	Core of SW ₂ OSC Coil (SW ₂ _O)	22.4 Mc	SW ₂ OSC Trimmer (C ₄₋₁)

b) Tracking Alignment

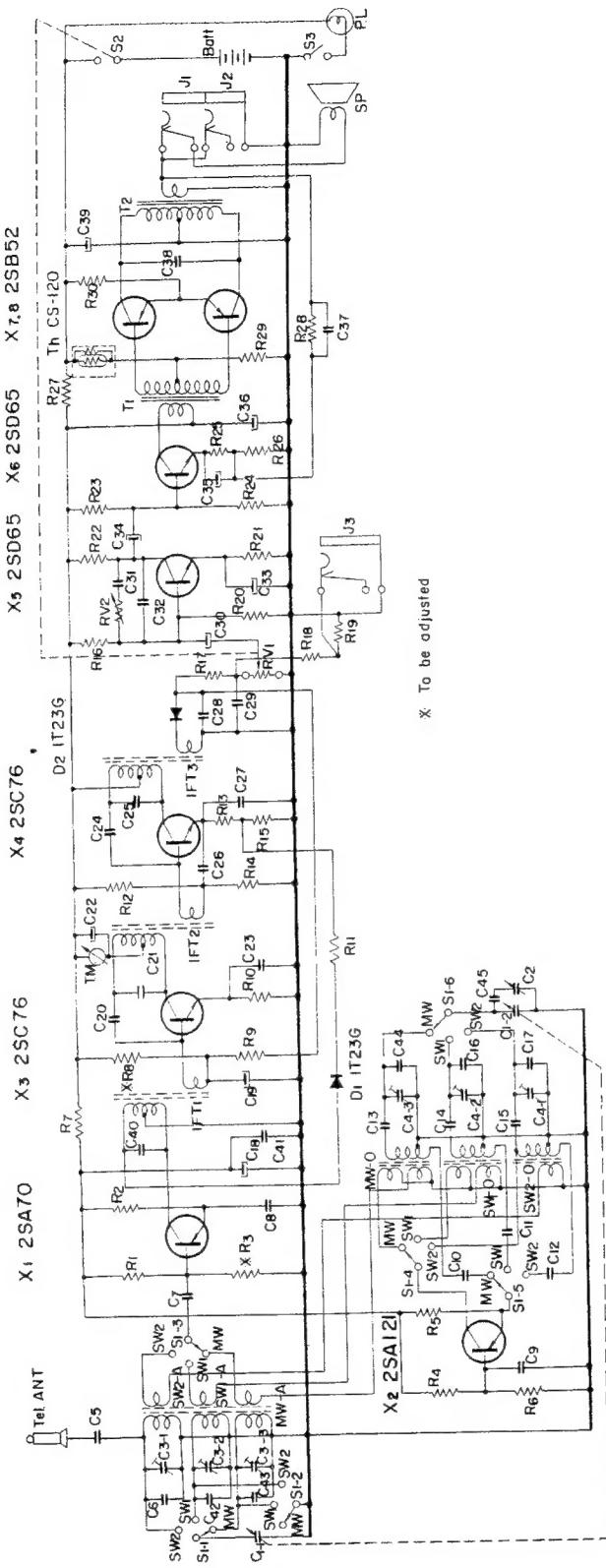
	Checking Point	Adjust	Checking Point	Adjust
MW	620 Kc	Position of MW ANT Coil (MW_A)	1,400 Kc	MW ANT Trimmer (C ₈₋₃)
SW ₁	2.90 Mc	Position of SW ₁ ANT Coil (SW ₁ _A)	8.60 Mc	SW ₁ ANT Trimmer (C ₃₋₂)
SW ₂	8.40 Mc	Position of SW ₂ ANT Coil (SW ₂ _A)	22.4 Mc	SW ₂ ANT Trimmer (C ₃₋₁)

To Remove the Chassis and Printed Circuit Board from the Cabinet

- (1) Open the Battery Lid and take out the Batteries.
- (2) Remove the two Back Cover Securing Screws.
It is not necessary to remove the Telescopic Antenna Holding Screw located at the lower right-hand corner of the Back Cover.
- (3) Open the Back Cover gently and detach the white antenna lead at the Telescopic Antenna by pulling out the Pin Plug from the Pin Connector Jack.
- (4) Remove the three Screws (F 2.6×5), the two Nuts (2.6φ) and the Back Cover Securing Screw Post shown by red arrows in the figure below.
- (5) If necessary, unsolder the following wires and remove the Twin Earphone Jack and the DET OUT Jack by pulling straight up.
 - a) Two wires (a black and a yellow) at the Speaker Terminals.
 - b) One red wire at the Battery Positive Contact Plate.
 - c) One black wire at the Battery Negative Spring.
 - d) Two wires (a red and a black) at the Tuning Meter.



Schematic Diagram



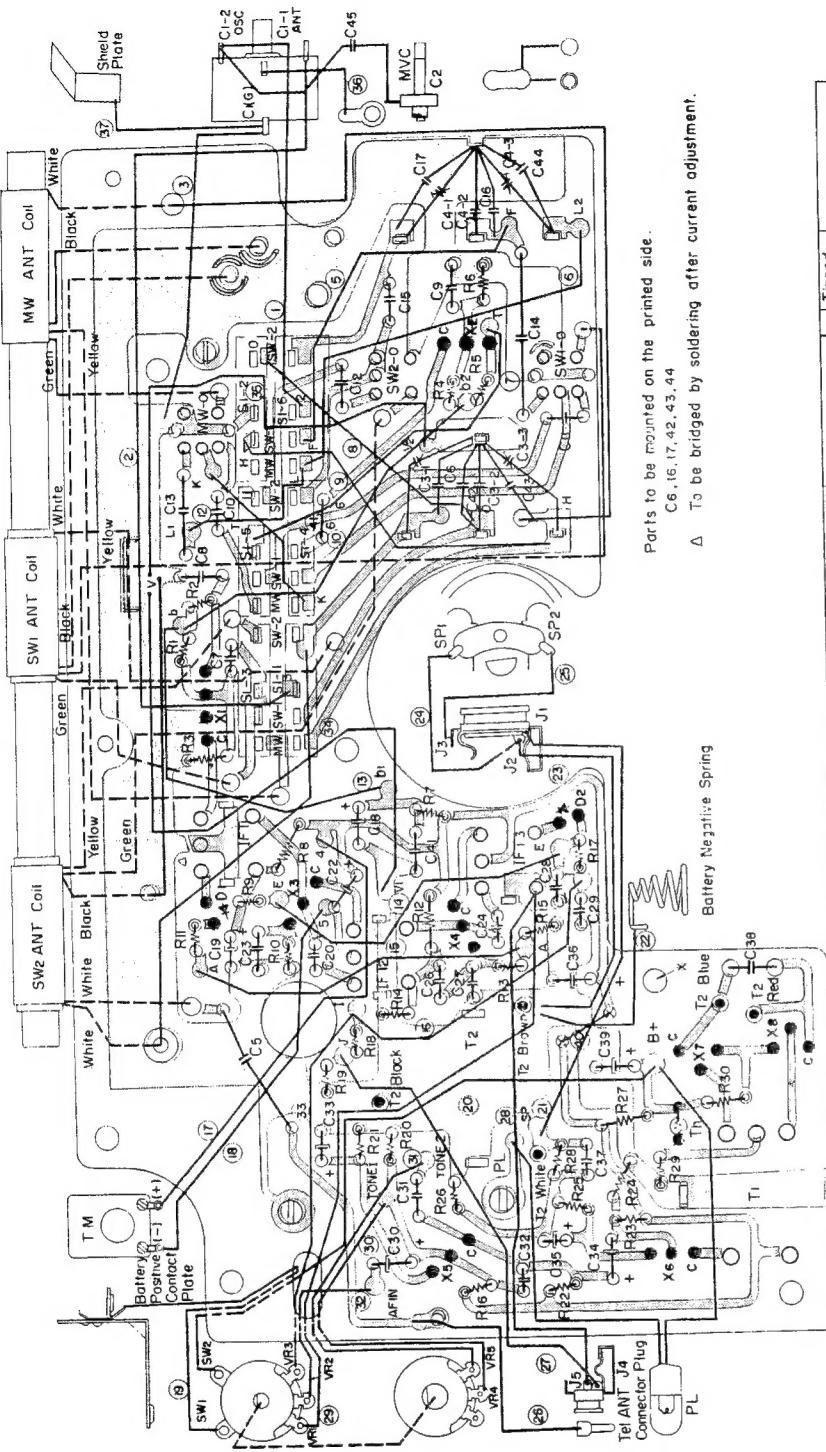
Electronic Parts List

Part No.	Symbol	Description	Part No.	Symbol	Description	Part No.	Symbol	Description	Part No.	Symbol	Description
1-501-039-11	Tel. ANT	Telescopic Antenna	1-203-405-00	R ₂	1.5KΩ	1/8W	Carbon	1-101-140-11	C ₅	0.005μF	Ceramic
MW-A	MW Ferrite Bar Antenna		1-203-338-00	*R ₃	27KΩ	"	"	1-101-073-11	C ₉	0.02μF	"
1-401-172-11	{ SW _{1-A}		1-203-373-00	R ₄	3.3KΩ	"	"	1-105-041-11	C ₁₀	0.01μF	Mylar
SW _{2-A}	SW ₂	"	1-203-367-00	R ₅	1KΩ	"	"	1-105-069-11	C ₁₁	0.001μF	"
1-405-098-11	MW-O	MW Oscillator Coil	1-203-385-00	R ₆	15KΩ	"	"	1-101-017-11	C ₁₂	200PF	Ceramic
1-405-097-11	SW _{1-O}	SW ₁	1-203-360-00	R ₇	330Ω	"	"	1-103-041-12	C ₁₃	330PF	Styrol
1-405-096-11	SW _{2-O}	SW ₂	1-203-394-00	*R ₅	56KΩ	"	"	1-103-043-12	C ₁₄	2200PF	"
1-403-034-00	IFT ₁	IF Transformer	1-203-378-00	R ₉	5.6KΩ	"	"	1-103-464-12	C ₁₅	6800PF	"
1-403-035-00	IFT ₂	"	1-203-361-00	R ₁₀	470Ω	"	"	1-101-013-11	C ₁₆	10PF	Ceramic
1-403-036-00	IFT ₃	"	1-203-367-00	R ₁₁	1KΩ	"	"	1-101-090-11	C ₁₇	25PF	"
1-423-049-00	T ₁	Driver Transformer	1-203-387-00	R ₁₂	22KΩ	"	"	1-121-115-00	C ₁₈	100μF	6V Electrolytic
1-427-094-11	T ₂	Output Transformer	1-203-360-00	R ₁₃	330Ω	"	"	1-121-104-00	C ₁₉	10μF	6V
RV ₁	5KΩ	Volume Control	1-203-373-00	R ₁₄	3.3KΩ	"	"	1-101-009-11	C ₂₀	1PF	Ceramic
RV ₂	20KΩ	Tone Control	1-203-415-00	R ₁₅	150Ω	"	"	1-200F (built in IFT ₂)	C ₂₁	1μF	1.5V Electrolytic
S ₁	Band Setting Switch		1-203-384-00	R ₁₆	12KΩ	"	"	1-121-174-00	C ₂₂	0.02μF	Mylar
S ₂	Power Switch (RV ₁)		1-203-361-00	R ₁₇	470Ω	"	"	1-105-045-11	C ₂₃	2PF	Ceramic
S ₃	Dial Light Switch		1-203-393-00	R ₁₈	91KΩ	"	"	1-101-010-11	C ₂₄	130PF (built in IFT ₃)	"
SP	Speaker		1-203-370-00	R ₁₉	2.2KΩ	"	"	1-105-045-11	C ₂₅	0.02μF	Mylar
T.M.	Tuning Meter		1-203-373-00	R ₂₀	3.3KΩ	"	"	1-105-045-11	C ₂₆	0.02μF	"
P.L.	Dial Light		1-203-412-00	R ₂₁	390Ω	"	"	1-105-041-11	C ₂₇	0.01μF	"
J _{1,2}	Twin Earphone Jack		1-203-363-00	R ₂₂	1.2KΩ	"	"	1-105-041-11	C ₂₈	0.01μF	"
J ₃	DET OUT Jack		1-203-377-00	R ₂₃	5.1KΩ	"	"	1-105-041-11	C ₂₉	0.01μF	"
Batt.	Battery (4.5V)		1-203-370-00	R ₂₄	2.2KΩ	"	"	1-121-101-00	C ₃₀	30μF	3V Electrolytic
X ₁	Transistor 2SA70		1-203-358-00	R ₂₅	220Ω	"	"	1-105-044-11	C ₃₁	0.05μF	Mylar
X ₂	" 2SA121		1-203-351-00	R ₂₆	5.1Ω	"	"	1-105-041-11	C ₃₂	0.002μF	"
X ₃	" 2SC76		1-203-832-00	R ₂₇	56Ω	"	"	1-121-124-00	C ₃₃	50μF	3V Electrolytic
X ₄	" 2SD65		1-203-358-00	R ₂₈	220Ω	"	"	1-121-102-00	C ₃₄	30μF	"
X ₅	" 2SD65		1-203-374-00	R ₂₉	3.9KΩ	"	"	1-121-124-00	C ₃₅	50μF	3V
X ₆	" 2SR52		1-203-351-00	R ₃₀	5.1Ω	"	"	1-121-115-00	C ₃₆	100μF	6V
X ₇	" 2SR52		1-203-351-00	R ₃₁	220Ω	"	"	1-105-045-11	C ₃₇	0.02μF	Mylar
X ₈	" 2SR52		1-151-078-11	C ₁₋₁₋₂	Tuning Capacitor, 2 gang	1-101-277-11	C ₃₈	0.1μF	"		
D ₁	Diode 1T23G		1-151-069-11	C ₂	Fine Tuning Capacitor	1-121-115-00	C ₃₉	100μF	6V Electrolytic		
D ₂	" 1T23G		1-141-015-00	C ₃₋₁₋₃	Trimmer Capacitor, 3 unit	1-101-144-11	C ₄₀	180PF (built in IFT ₁)			
Th	Thermistor CS-120		1-141-015-00	C ₄₋₁₋₃	"	1-101-026-11	C ₄₁	0.05μF	Ceramic		
Resistor	4.7KΩ	1/8W Carbon	1-101-087-11	C ₆	20PF Ceramic	1-101-012-11	C ₄₂	1.5PF	"		
			1-101-072-11	C ₇	30PF "	1-101-012-11	C ₄₃	5PF	"		
					0.01μF	1-101-012-11	C ₄₄	5PF	"		
					"	1-101-012-11	C ₄₅	5PF	"		

* To be adjusted

Mounting Diagram

—Printed Side —

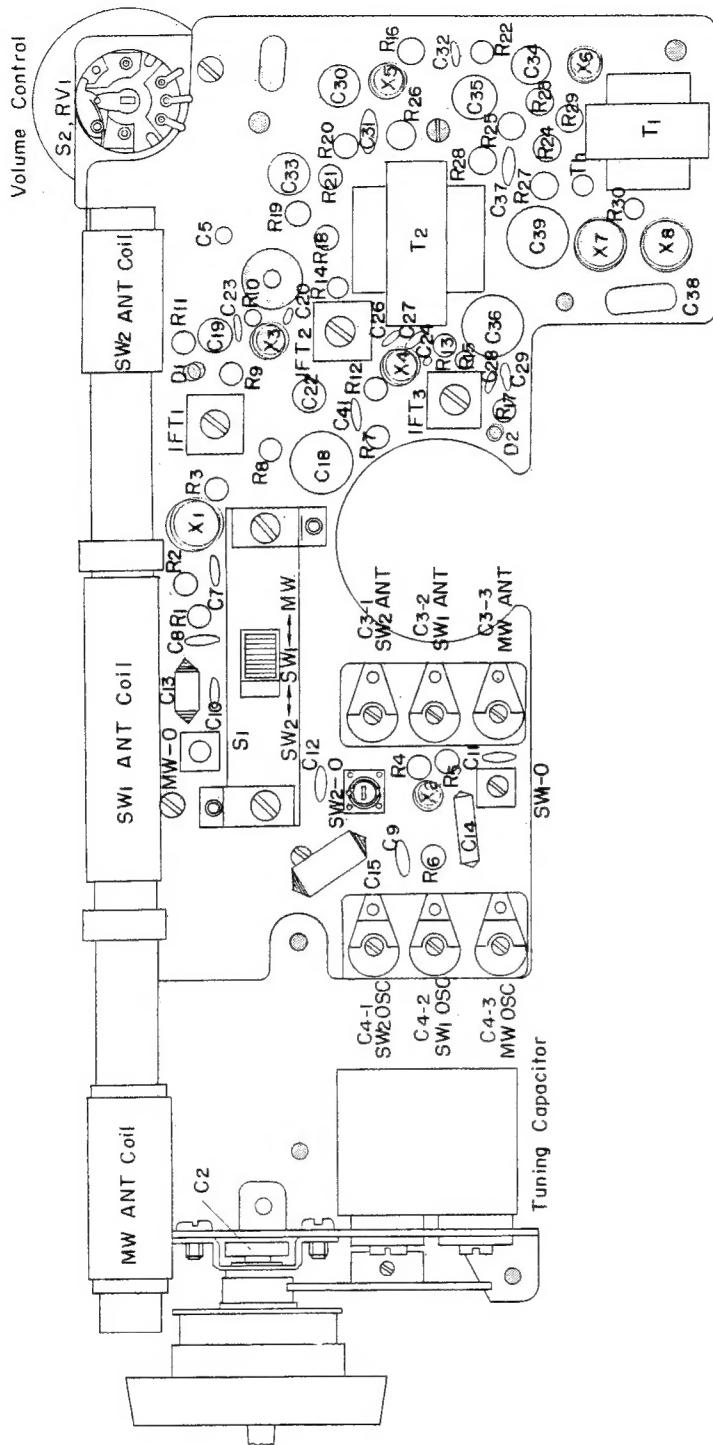


Parts to be mounted on the printed side.
C6, 16, 17, 42, 43, 44
Δ To be bridged by soldering after current adjustment.

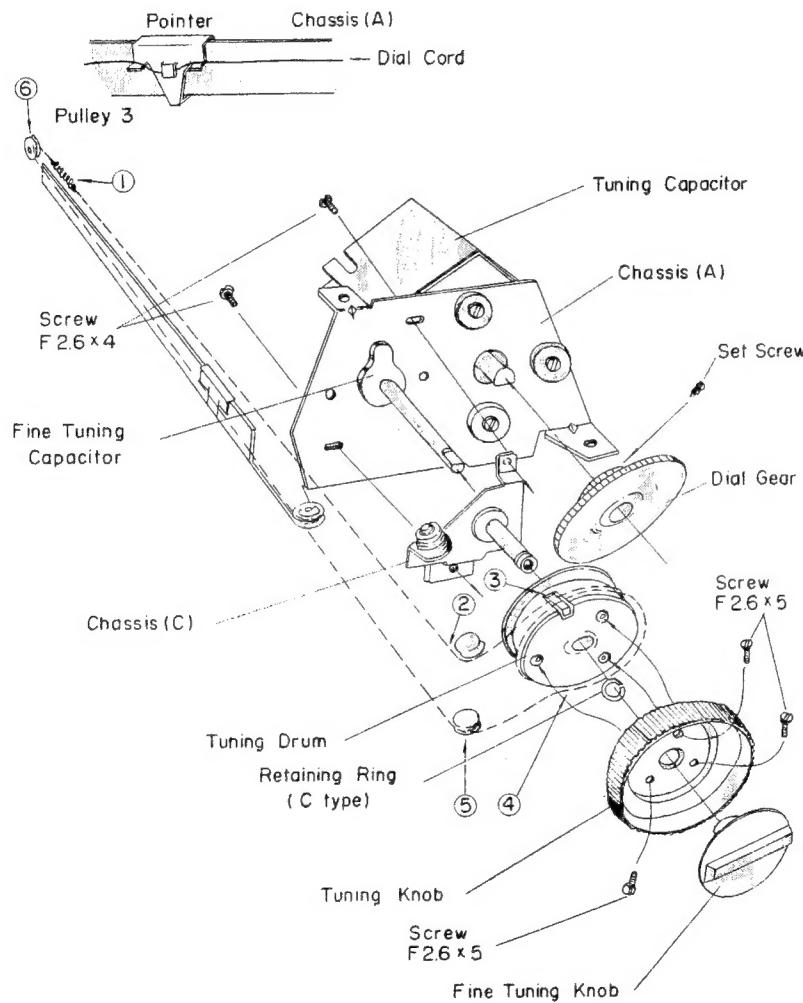
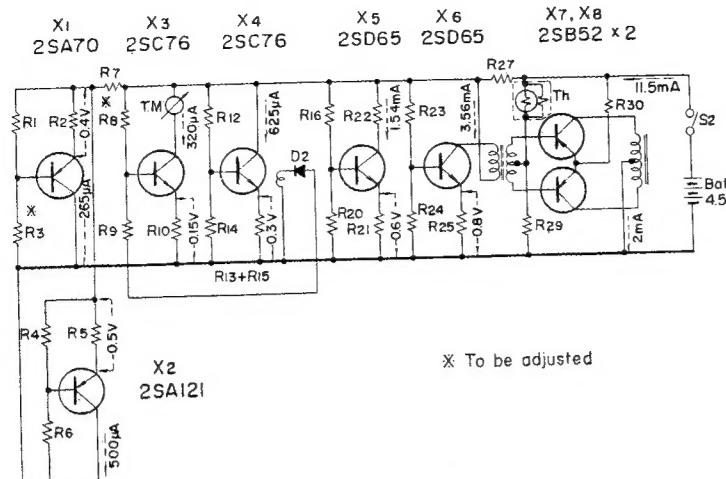
No	PVC Wire Colour	Connection	No	PVC Wire Colour	Connection	No	PVC Wire Colour	Connection
1	Yellow	Si-4 ~ C1-2	1	White	J1 ~ (SP)	41	Orange	V93 ~ (TONE2)
2	Red	Si-1 ~ C1-1	2	Black	VR2 ~ (AF IN)	42	Yellow	(6) ~ (6)
3	Black	G ~ C1(6)	3	Black	T2 ~ T2	43	White	VR3 ~ (1)
4	deleted	[] ~ []	4	Black	J2 ~ SP1	44	Black	(V) ~ (V)
5	Orange	(F) ~ (F)	5	Yellow	J3 ~ SPE	45	Black	(V) ~ (V2)
6	White	(L2) ~ (L)	6	White	VR1 ~ Tel ANT Tip	46	Black	GND Lng ~ C1(6)
7	Yellow	(T) ~ (T)	7	White	C5 ~ (J)	47	Black	Shield Plate ~ C1(6)
8	Black	(O) ~ (O)	8	Black	T M ~ (S)	48	Black	J5 ~ IF13
9	Black	(H) ~ (H)	9	Red	+ B ~ SW1	49	Black	VR1 ~ IF13
10	Red	(B) ~ (B)	10	Red	SW2 ~ (B)	50	White	VR4 ~ (TONE1)

MOUNTING DIAGRAM

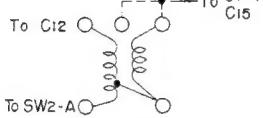
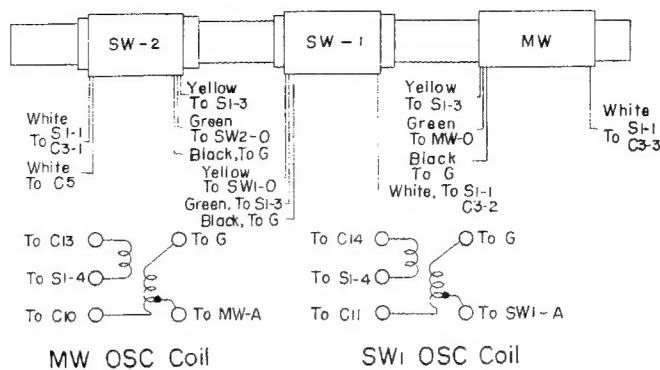
— Parts Side —



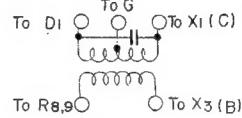
Current and Voltage Distribution Chart at Zero Signal



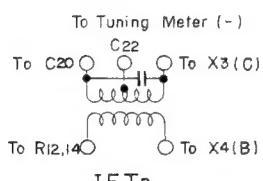
SW₂, SW₁, MW Ferrite Bar Antenna



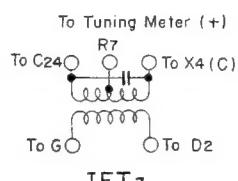
SW2 OSC Coil



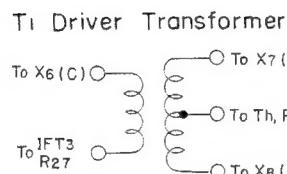
SW1 OSC Coil



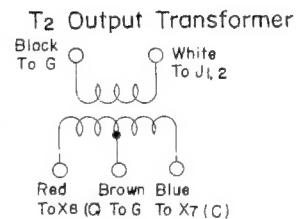
IFT2



IFT3



T1 Driver Transformer



T2 Output Transformer

T1	Impedance	DC Resistance	T2	Impedance	DC Resistance
Primary	680Ω	65 Ω	Primary	68Ω	5.7Ω
Secondary	1.6 KΩ	176 Ω	Secondary	8Ω	0.9Ω

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